SANTA CRUZ BIOTECHNOLOGY, INC.

Arylsulfatase E siRNA (h): sc-91236

BACKGROUND

Sulfatases hydrolyze sulfate esters from sulfated steroids, carbohydrates, proteoglycans and glycolipids. They are involved in hormone biosynthesis, modulation of cell signaling and degradation of macromolecules. Arylsulfatase E, also known as CDPX, CDPX1 or CDPXR, is a 589 amino acid Golgi apparatus protein expressed in the pancreas, liver and kidney. Belonging to the sulfatase family, Arylsulfatase E may be essential for the correct composition of cartilage and bone matrix during development. Inhibited by warfarin, Arylsulfatase E activity occurs under optimal pH and temperature. Defects in the gene encoding Arylsulfatase E are the cause of chondrodysplasia punctata X-linked recessive type 1 (CDPX1), which is characterized by aberrant bone mineralization, severe underdevelopment of nasal cartilage and distal phalangeal hypoplasia. Arylsulfatase E has no activity toward steroid sulfates.

REFERENCES

1. Chen, N.T., et al. 1988. Potentiation of angiostatic steroids by a synthetic inhibitor of arylsulfatase. Lab. Invest. 59: 453-459.
2. Parenti, G., et al. 1997. The sulfatase gene family. Curr. Opin. Genet. Dev. 7: 386-391.
3. Dahl, H.H., et al. 1999. Late diagnosis of maternal PKU in a family segregating an arylsulfatase [corrected] E mutation causing symmetrical chondrodysplasia punctata. Mol. Genet. Metab. 68: 503-506.
4. Seidel, J., et al. 2001. Brachytelephalangic dwarfism due to the loss of ARSE and SHOX genes resulting from an X;Y translocation. Clin. Genet. 59: 115-121.
5. Brunetti-Pierri, N., et al. 2003. X-linked recessive chondrodysplasia punctata: spectrum of arylsulfatase E gene mutations and expanded clinical variability. Am. J. Med. Genet. A 117A: 164-168.
6. Wolpoe, M.E., et al. 2004. Severe tracheobronchial stenosis in the X-linked recessive form of chondrodysplasia punctata. Arch. Otolaryngol. Head Neck Surg. 130: 1423-1426.
7. Chocholska, S., et al. 2006. Molecular cytogenetic analysis of a familial interstitial deletion Xp22.2-22.3 with a highly variable phenotype in female carriers. Am. J. Med. Genet. A 140: 604-610.

CHROMOSOMAL LOCATION

Genetic locus: ARSE (human) mapping to Xp22.33.

PRODUCT

Arylsulfatase E siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Arylsulfatase E shRNA Plasmid (h): sc-91236-SH and Arylsulfatase E shRNA (h) Lentiviral Particles: sc-91236-V as alternate gene silencing products.

For independent verification of Arylsulfatase E (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-91236A, sc-91236B and sc-91236C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Arylsulfatase E siRNA (h) is recommended for the inhibition of Arylsulfatase E expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

Arylsulfatase E (F-4): sc-393224 is recommended as a control antibody for monitoring of Arylsulfatase E gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Arylsulfatase E gene expression knockdown using RT-PCR Primer: Arylsulfatase E (h)-PR: sc-91236-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.